

IN THE DRAWINGS

Applicants have provided replacement drawing sheets for Figures 2A, 2B, 3 and 4, labeled "Prior Art" as the Examiner suggested. Approval of the replacement drawings is respectfully requested.

REMARKS

Claims 1-7 were examined. All claims were rejected. In response to the above-identified Office Action, Applicants amend claim 1 and add new claims 10 and 11. Reconsideration of the rejected claims in light of the following remarks is requested.

I. Claims Rejected Under 35 U.S.C. § 103(a)

The Examiner rejected claims 1-3 and 5-7 under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 6,356,693 issued to Shimizu *et al.* ("*Shimizu*") in view of U.S. Patent No. 5,317,448 issued to Nobuhara ("*Nobuhara*"). Applicants previously argued that the references of record failed to teach or suggest the operational principle exploited by embodiments of their invention, but the Examiner responded that such a principle was not claimed. Consequently, Applicants have amended claim 1 to make clear that the laser beam is inputted into the saturable absorber area to reduce a recovery time of the saturable absorber.

As to claim 1, that claim recites an optical signal processor comprising a saturable absorber area and a gain-clamped optical amplifier area formed on one face of a substrate. The gain-clamped optical amplifier includes a diffraction grating for generating a laser beam, which is inputted into the saturable absorber area to reduce its recovery time. The Examiner identifies many of the structures of claim 1 within *Shimizu's* disclosure, but even assuming for the sake of argument that *Shimizu's* structures are indeed analogous, *Shimizu* lacks at least a diffraction grating for generating a laser beam.

The Examiner relies on *Nobuhara* for its teaching of an optical amplifier including a diffraction grating to generate a laser beam. However, *Nobuhara's* amplifier does not generate a laser beam to reduce a recovery time of a saturable absorber, as claim 1 requires. In fact, *Nobuhara* operates with a bias current I_b set slightly below the threshold current I_{TH} that would be necessary to cause spontaneous oscillation (*see* col. 5, lines 45-47 and col. 8, lines 25-28). Thus, when no input signal is present, *Nobuhara's* apparatus does not generate a laser beam at all, and even when it does generate a laser beam (because an input signal stimulates emission of photons in response to the passage of the wavefront of the input optical beam), that laser beam does not reduce the recovery

time of a saturable absorber. Instead, *Nobuhara*'s generated laser beam is simply the output signal of the amplifier.

For at least these reasons, Applicants respectfully submit that claim 1 is not obvious over *Shimizu* in view of *Nobuhara*, and request that the Examiner withdraw this rejection of the claim.

As to claims 2, 3, and 5-7, those claims depend directly or indirectly upon claim 1, and are patentable for at least the reasons discussed in support of their base claim. The Examiner is requested to withdraw these rejections as well.

The Examiner rejected claim 4 as unpatentable over *Shimizu* and *Nobuhara*, and further in view of U.S. Patent No. 5,754,714 issued to Suzuki *et al.* ("*Suzuki*"). *Suzuki* is relied upon only for its teaching of applying an anti-reflection film to faces of a laser amplifier, and Applicants have been unable to locate other material therein that would supply the deficiencies of *Shimizu* and *Nobuhara* with respect to claim 4's base claim, claim 1. Thus, even assuming for the sake of argument that *Suzuki* teaches shielding the facets of the saturable absorber area and the gain-clamped optical amplifier area with an anti-reflection film, it appears that claim 4 is allowable at least for the reasons discussed above in support of claim 1. Applicants request that the rejection of claim 4 be withdrawn also.

II. New Claims

Applicants have added claims 10 and 11 to more clearly set forth and distinctly claim material that they regard as their invention. Support for claim 10 is at Specification p. 9, lines 6-9. Support for claim 11 is at Specification, p. 11, lines 3-4. Each new claim depends directly or indirectly upon claim 1, which was shown to be patentable over the references of record in the preceding discussion. In addition, Applicants have been unable to locate the material of the new claims in the references of record. For at least these reasons, Applicants respectfully request that the Examiner allow new claims 10 and 11.

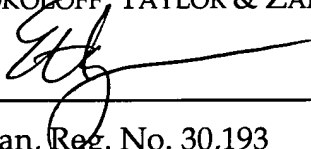
CONCLUSION

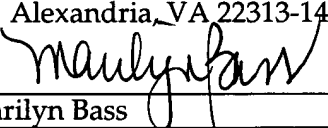
In view of the foregoing, it is believed that all claims now pending, namely claims 1-7, 10 and 12, patentably define the subject invention over the prior art of record, and are in condition for allowance and such action is earnestly solicited at the earliest possible date. If the Examiner believes that a telephone conference would be useful in moving the application forward to allowance, the Examiner is encouraged to contact the undersigned at (310) 207-3800.

Respectfully submitted,

BLAKELY, SOKOLOFF TAYLOR & ZAFMAN, LLP

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Eric S. Hyman, Reg. No. 30,193

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| <p>12400 Wilshire Boulevard Seventh Floor Los Angeles, California 90025 (310) 207-3800</p> | <p style="text-align: center;"><u>CERTIFICATE OF MAILING</u></p> <p>I hereby certify that the correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to:</p> <p>Mail Stop RCE Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450</p> <p> Marilyn Bass</p> <p style="text-align: right;">07-13-05 Date</p> |
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